

IN THE CLAIMS:**Listing of Claims:**

1 9. (proposed amended) A process for controlling the pressure within a semiconductor
2 processing chamber, comprising the steps of:

3 pressure control steps, comprising:

4 first generating a pressure sensor signal responsive to the pressure in said
5 chamber; and

6 second generating a step command signal responsive to said pressure sensor
7 signal and a tool logic signal, said step command signal generating comprising applying a
8 pressure control algorithm to said pressure sensor and tool logic signals;

9 position control steps, comprising:

10 third generating a direction/speed command signal responsive to said step
11 command signal and valve position feedback signal, said direction/speed command signal
12 generating comprising applying a position control algorithm to said step command and valve
13 position feedback signals;

14 actuating said valve responsive to said direction/speed command signal, said
15 actuating comprising moving said valve by operation of a motor drive, said actuating
16 resulting in said valve residing in a position, said valve in fluid communication with said
17 chamber; and

18 fourth generating another said valve position feedback signal responsive to said
19 position of said valve, said valve position feedback signal comprising data representing the
20 position of said motor drive operatively connected to said valve; and

21 repeating position control steps and said pressure control steps as appropriate until
22 said pressure is controlled adequately.

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1 10. (original) The process of Claim 9, wherein said valve actuating step comprises actuating
2 a valve stem, and said valve stem actuating and said valve feedback signal generating comprise
3 an actuating/feedback step.

1 11. (original) The process of Claim 10, wherein said actuating/feedback step is conducted by
2 a drive assembly, said drive assembly comprising a motor drive attached directly to said valve
3 stem.

1 12. (previously presented) The process of Claim 10, wherein said drive assembly conducting
2 said actuating/feedback step further comprises a reduction gear means attached to the motor
3 drive.

1 13. (canceled)

1 14. (proposed amended) A process for controlling the fluid flow through a conduit whereby
2 the pressure in a semiconductor processing chamber in fluid communication with said conduit is
3 controlled, comprising the steps of:

4 pressure control steps, comprising:

5 generating a pressure sensor signal responsive to the pressure in said chamber; and

6 generating a step command signal responsive to said pressure sensor signal and a
7 tool logic signal, said step command signal generating comprising applying a flow control algorithm
8 to said pressure sensor and tool logic signals;

9 position control steps, comprising:

10 generating a direction/speed command signal responsive to said step command
11 signal and valve position feedback signal, said direction/speed command signal generating
12 comprising applying a position control algorithm to said step command and valve position feedback
13 signals;

14 actuating said valve responsive to said direction/speed command signal, said
15 actuating comprising moving said valve by operation of a motor drive, said actuating resulting in
16 said valve residing in a valve position, said valve in fluid communication with said conduit; and
17 generating another said valve position feedback signal responsive to said position of
18 said valve, said valve position feedback signal comprising data representing the position of said
19 motor drive operatively connected to said valve; and
20 repeating said position control steps and said pressure control steps, as appropriate until said
21 conduit fluid flow and said chamber pressure are controlled adequately.

1 15. (original) The process of Claim 14, wherein said valve actuating step comprises
2 actuating a valve stem, and said valve stem actuating and said valve feedback signal generating
3 comprise an actuating/feedback step.

1 16. (original) The process of Claim 15, wherein said actuating/feedback step is conducted by
2 a drive assembly, said drive assembly comprising a motor drive attached directly to said valve
3 stem.

1 17. (previously presented) The process of Claim 15, wherein said drive assembly conducting
2 said actuating/feedback step further comprises a reduction gear means attached to the motor
3 drive.

1 18. (canceled)

2 19. (proposed amended) A process for controlling the pressure within a semiconductor
3 processing chamber, comprising the steps of:

4 first generating a pressure sensor signal responsive to the pressure in said chamber;

5 second generating a step command signal responsive to said pressure sensor signal and a
6 tool logic signal, said step command signal generating comprising applying a pressure control
7 algorithm to said pressure sensor and tool logic signals;

8 third generating a direction/speed command signal responsive to said step command
9 signal and valve position feedback signal, said direction/speed command signal generating
10 comprising applying a position control algorithm to said step command and valve position
11 feedback signals;

12 actuating said valve responsive to said direction/speed command signal, said actuating
13 comprising moving said valve by operation of a motor drive assembly, said actuating resulting in
14 said valve residing in a position, said valve in fluid communication with said chamber;

15 fourth generating another said valve position feedback signal responsive to said position
16 of said valve, said valve position feedback signal comprising data representing the position of
17 said motor drive assembly operatively connected to said valve;

18 first repeating said third generating, said actuating and said fourth generating steps until
19 said motor drive assembly is positioned adequately; and

20 second repeating said first and second generating and said first repeating steps until said
21 pressure is controlled adequately.

20. (previously presented) The process of Claim 19, wherein:

said valve further comprises a valve stem; and

said motor drive assembly comprises a motor drive and reduction gear means, said
reduction gear means operatively connected between said motor drive and said valve stem.

21. (previously presented) The process of Claim 20, wherein said motor drive assembly
position comprises the rotational position of said reduction gear means.

22. (previously presented) The process of Claim 19, wherein:

said valve further comprises a valve stem; and

said motor drive assembly comprises said valve stem, a motor drive and reduction
gear means, said reduction gear means operatively connected between said motor drive and said
valve stem.

23. (previously presented) The process of Claim 20, wherein said motor drive assembly position comprises the position of said valve stem.

24. (previously presented) The process of Claim 19, wherein:

said valve further comprises a valve stem; and

said motor drive assembly comprises a motor drive operatively connected to said valve stem.

25. (previously presented) The process of Claim 24, wherein said motor drive assembly position comprises the position of said valve stem.

26. (proposed amended) A process for controlling the fluid flow through a conduit whereby the pressure in a semiconductor processing chamber in fluid communication with said conduit is controlled, comprising the steps of:

generating a pressure sensor signal responsive to the pressure in said chamber;

generating a step command signal responsive to said pressure sensor signal and a tool logic signal, said step command signal generating comprising applying a pressure control algorithm to said flow sensor and tool logic signals;

generating a direction/speed command signal responsive to said step command signal and valve position feedback signal, said direction/speed command signal generating comprising applying a position control algorithm to said step command and valve position feedback signals;

actuating said valve responsive to said direction/speed command signal, said actuating comprising moving said valve by operation of said motor drive assembly, said actuating resulting in said valve residing in a valve position, said valve in fluid communication with said conduit;

generating another said valve position feedback signal responsive to said position of said valve, said valve position feedback signal comprising data representing the position of said motor drive assembly operatively connected to said valve;

17 first repeating said direction/speed command signal generating step, said actuating step and
18 said valve position feedback signal generating step until said motor drive assembly is positioned
19 adequately; and

20 second repeating said first and second generating and said first repeating steps until said
21 conduit fluid flow and said chamber pressure are controlled adequately.

1 27. (previously presented) The process of Claim 26, wherein:

2 said valve further comprises a valve stem; and

3 said motor drive assembly comprises a motor drive and reduction gear means, said
4 reduction gear means operatively connected between said motor drive and said valve stem.

1 28. (previously presented) The process of Claim 27, wherein said motor drive assembly
2 position comprises the rotational position of said reduction gear means.

1 29. (previously presented) The process of Claim 26, wherein:

2 said valve further comprises a valve stem; and

3 said motor drive assembly comprises said valve stem, a motor drive and reduction
4 gear means, said reduction gear means operatively connected between said motor drive and said
5 valve stem.

1 30. (previously presented) The process of Claim 29, wherein said motor drive assembly
2 position comprises the position of said valve stem.

1 31. (previously presented) The process of Claim 26, wherein:

2 said valve further comprises a valve stem; and

3 said motor drive assembly comprises a motor drive operatively connected to said
4 valve stem.

1 32. (previously presented) The process of Claim 31, wherein said motor drive assembly
2 position comprises the position of said valve stem.

1 33. (new) The process of Claim 9, wherein said motor drive of said valve actuating step
2 comprises a stepper motor.

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